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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)		
	10/037,427	HEINZ ET AL.		
Office Action Summary	Examiner	Art Unit		
	Stefan Kruer	3654		
The MAILING DATE of this communication app Period for Reply	pears on the cover sheet with the c	orrespondence address		
A SHORTENED STATUTORY PERIOD FOR REPLY WHICHEVER IS LONGER, FROM THE MAILING DA - Extensions of time may be available under the provisions of 37 CFR 1.1: after SIX (6) MONTHS from the mailing date of this communication. - If NO period for reply is specified above, the maximum statutory period v - Failure to reply within the set or extended period for reply will, by statute Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 36(a). In no event, however, may a reply be tin vill apply and will expire SIX (6) MONTHS from , cause the application to become ABANDONE	lely filed the mailing date of this communication. (35 U.S.C. § 133).		
Status				
Responsive to communication(s) filed on 19 O This action is FINAL . 2b) ☐ This Since this application is in condition for allowar closed in accordance with the practice under E	action is non-final. nce except for formal matters, pro			
Disposition of Claims				
4) Claim(s) 1 - 31, 33 - 38 and 43 - 45 is/are pend 4a) Of the above claim(s) 27 is/are withdrawn f 5) Claim(s) is/are allowed. 6) Claim(s) 1-26, 28-31, 33 - 38 and 43 - 45 is/are 7) Claim(s) is/are objected to. 8) Claim(s) are subject to restriction and/o	rom consideration.			
··· _				
9) ☐ The specification is objected to by the Examine 10) ☑ The drawing(s) filed on 05 March 2002 is/are: Applicant may not request that any objection to the Replacement drawing sheet(s) including the correct 11) ☐ The oath or declaration is objected to by the Ex	a)⊠ accepted or b)⊡ objected to drawing(s) be held in abeyance. See ion is required if the drawing(s) is obj	e 37 CFR 1.85(a). ected to. See 37 CFR 1.121(d).		
Priority under 35 U.S.C. § 119				
 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. 				
Attachment(s)	A) 🗖 Index 1:	(DTO 442)		
 Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-948) Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 	4) Interview Summary Paper No(s)/Mail Da 5) Notice of Informal P 6) Other:	ite		

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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 4, 6, 13, 16, 28, 31 and 43 - 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Winninger et al (US 6,033,331) in view of White, Jr. et al (4,981,462).

Winninger et al disclose:

- an elastomeric body (21, Fig. 1) having a width w and a thickness t and having a pulley-engaging surface;
- the elastomeric body having an aspect ratio w/t that is greater than 1;
- a tensile cord (20) contained within the elastomeric body and extending longitudinally;
- the pulley-engaging surface having a ribbed profile extending longitudinally along the elastomeric body (Fig. 6); and
- a ribbed profile having a rib (23) depicted as having an angle of approx. 90°;
- a plurality of ribs (23);
- a plurality of tensile cords (20);
- at least one pulley (61) having a ribbed profile (62) engaged with the pulley engaging surface;
- wherein the rib angle is depicted in the range of approximately 60° to 120°;

however, though Winninger et al depict their rib having an angle of approximately 90°, Winninger et al are otherwise silent with respect to an angle of their rib while referencing norms and dimensional designations in accordance to ISO 9981, for which a rib angle of 40° is of consideration (2nd Ed., Table 1).

Attention is directed to White, Jr. et al, who teach a preference of a rib having a 60° angle versus a conventional 40° angle for the features as claimed by the instant invention – reduction in belt noise and reduced tension decay (Col. 2, L. 2 – 8 and Col. 5, L. 61 - Col. 6, L. 12).

In as much as the drawings of Winninger et al depict a rib angle of approximately 90° and the reference of White, Jr. et al teach the beneficial features of a 50% larger rib angle than that of conventional ribs, it would have been obvious to one having ordinary skill in the art to modify the reference of Winninger et al with the teaching of White, Jr. et al to increase the rib angles additionally, within the framework of White, Jr. et al and as depicted by Winninger et al, in experimentation having predictable results to gain the benefits of enhanced/stabilized power transfer and service life.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 5, 14, 17 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al and White Jr. et al, as applied to Claims 1, 13, 16 and 28, respectively, and in further view of Adifon et al (WO 99/43598).

Re: Claim 2, Winninger et al disclose their tensile cord (20) comprising non-conductive material (Col. 3, L. 49). White, Jr. et al are silent with respect to a material of construction of their tensile cord (37) other than specifically referencing prior art.

Attention is directed to Adifon et al who teach their tensile cord (726) comprising a conductive material, as inherent to fibers of "...high-carbon steel..." (Pg 7, Line 15).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al and White Jr. et al with the teaching of Adifon et al for the benefit of strength and resilience to high temperature, the latter for safety.

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Re: Claims 5 and 17, Winninger et al and White Jr. et al disclose their belts as having no end.

Attention is directed to Adifon et al who teach their belt (16) as having an end for the suspension and traction of their elevator car (12) and counterweight.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al and White Jr. et al with the teaching of Adifon et al for the benefit of utility in suspending and moving elevator components.

Re: Claims 14 and 29, Winninger et al and White Jr. et al are silent with respect to their tensile cord having a conductive material having a resistance.

Adifon et al teach their tensile cord (726) comprising a conductive material having a resistance, as inherent to fibers of "...high-carbon steel..." (Pg 7, Line 15).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al and White Jr. et al with the teaching of Adifon et al to provide tensile cords of conductive material having a resistance, wherein such cords are of metallic material whereby a resistance to high temperature (e.g. fire) maintains strength for safety.

Claims 3, 7, 15, 18 - 19, 21 – 22 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al, White Jr. et al and Adifon et al, as applied to Claims 2, 14 and 29, and in further view of Suhling (DE 3,934,654) and Siefert (US 3,662,596).

Re: Claims 3, 15 and 30, Winninger et al and White Jr. et al are silent with respect to tension cords of conductive material and Adifon et al teach a tensile cord comprising a conductive material having a resistance, wherein the resistance of the cord inherently varies through changes in loading, their tensile cord as such is not configured for indicating change in resistance.

Attention is directed to Suhling who teaches the incorporation of conductive tensile cords (12a – 12h, Fig. 2) in conventional flat- and toothed suspension belts (11) for the detection of breakage, whereby the integrity of the suspension belt is monitored for replacement; however, Suhling does not indicate a lifting load.

Further consideration is directed towards Siefert who teaches his apparatus for the measurement of "...tension or compression stresses in a metal tire cord embedded in rubberized material of a tire..." as a means to determine the tensile/compressive strains of "...reinforcing metal cords..." under different inflation, loading and operating conditions (Col. 1, Line 13).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al, White Jr. et al and Adifon et al with the teachings of Suhling and Siefert to provide a means to determine the lifting load of suspension belts by monitoring the tension cords for elongation in advance of failure, for purposes of maintenance, safety and optimization.

Re: Claim 7, Winninger et al are silent with respect to a jacket on a surface opposite their pulley-engaging surface.

Attention is directed to White, Jr. et al who teach their jacket (30) on a surface opposite their pulley-engaging surface as known to the art (Col. 4, Line 20).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al with the teaching of White, Jr. et al to provide a jacket on a surface opposite the pulley-engaging surface as known to the art.

Re: Claim 18, Adifon et al disclose a plurality of tensile cords (726).

Re: Claim 19, Winninger et al are silent with respect to a jacket on a surface opposite the pulley-engaging surface.

Attention is directed to White, Jr. et al who teach their jacket (30) on a surface opposite their pulley-engaging surface as known to the art (Col. 4, Line 20).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al with the teaching of White, Jr. et al to provide a jacket on a surface opposite the pulley-engaging surface as known to the art.

Re: Claims 21 and 22, Adifon et al disclose their cords "...formed from ... a metallic material, such as thin, high-carbon steel..."

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al, White, Jr. et al and Adifon et al, Suhling, Siefert, as applied to Claim 19, and in further view of Stork (US 3,948,113).

Winninger et al are silent regarding a jacket and though White et al discloses his jacket as well known in the art, he is silent with regard to its material of construction.

Adifon et al, Suhling and Siefert are silent regarding a jacket as well.

Attention is directed to Stork who teaches his jacket (17,18, Fig. 2 and Col. 3, line 57) comprising "...rubberized woven fabric material such as ... nylon..."

In that nylon is known to the art as an abrasion resistant material, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reference of Winninger et al, White, Jr. et al, Adifon et al, Suhling and Seifert with the teaching of Stork to form the jacket of nylon for resistance to wear.

Claims 8 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al, White, Jr. et al, Adifon et al, Suhling and Siefert, as applied to Claim 7, and in further view of Stork.

Re: Claim 8, Winninger et al are silent regarding a jacket and, though White, Jr. et al disclose their jacket as well known in the art; they are silent with regard to its material of construction.

Neither Adifon et al, Suhling nor Siefert disclose a jacket.

Stork, however, teaches his jacket (17,18, Fig. 2 and Col. 3, line 57) comprising "...rubberized woven fabric material such as ... nylon..."

In that nylon is known to the art as an abrasion resistant material, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reference of Winninger et al, White, Jr. et al, Adifon et al, Suhling and Siefert with the teaching of Stork to form the jacket of nylon for resistance to wear.

Re: Claims 9 and 10, Winninger et al disclose their tensile cord (20) comprising non-metallic material (Col. 3, L. 49). White, Jr. et al are silent with respect to a material of construction of their tensile cord (37) other than referencing specific prior art.

Attention is directed to Adifon et al who teach their cords "...formed from ... a metallic material, such as thin, high-carbon steel..." (Pg 7, Line 15) for strength and flexibility.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al and White, Jr. et al with the teaching of Adifon et al for the benefits of strength, flexibility and resilience to high temperature, the latter additionally for safety.

Claims 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al and White, Jr. et al, as applied to Claims 1 and 13, respectively, and in further view of Siefert.

Neither Winninger et al nor White, Jr. et al address a measurement of tensile cord loading.

Attention is directed to Siefert who teaches an electrical circuit (21, 22, 25, Fig. 1) connected to the tensile cord for measuring the stress-strain of metal cords, for various loading conditions. Conversely, based on the measured strains, the tensile loads can be calculated.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al and White, Jr. et al with the teachings of Siefert to provide a means to determine the tensile cord load of suspension belts by measuring the stresses of said cords through electrical transducers (P/I), to provide instantaneous feedback for operational oversight and historical data.

Claims 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al and White, Jr. et al, as applied to Claims 1 and 13, respectively, and in further view of Suhling.

Neither Winninger et al nor White, Jr. et al address a measurement of tensile cord failure.

Attention is directed to Suhling who teaches his tensile cords for the detection of breakage, including his electrical circuit (Fig. 1) for detection of such failure.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al and White, Jr. et al with the teaching of Suhling to provide a means to monitor the failure of tension members for safety and maintenance.

Claims 25, 33 – 34 and 36 – 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al and White, Jr. et al, as applied to Claims 1, 13 and 33, respectively, and in further in view of Stork.

Re: Claims 25 and 33 – 34, Winninger et al and White, Jr. et al are silent regarding a fiber loading of their elastomeric bodies.

Attention is directed to Stork who teaches fiber loading in his elastomeric body to resist the formation of cracks (Col. 4, Line 8).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al and White, Jr. et al with the teaching of Stork to extend fibers from the pulley-engaging surface to improve resistance to wear and failure.

With respect to **Claims 36 – 37**, Stork teaches, "...rubberized woven fabric material such as cotton, polyester or nylon or combinations thereof..." (Col. 3, Line 58) that forms his "partial tension section" as a "flexible resilient material".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reference of Winninger et al with the teaching of Stork to provide a matrix of fibers for the enhancement of tensile and torsional strength properties.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al in view of White, Jr. et al and Suhling and in further view of Siefert.

Winninger et al depict their belt having ribbed profile of approximately 90° to engage a pulley having a ribbed profile to enhance harmonic filtering and thereby service life, however Winninger et al reference ISO 9981 in which a rib angle of 40° is considered. Furthermore, Winninger et al are silent regarding the detection of a tensile cord load.

White Jr. et al teach a preference of a rib having a 60° angle versus a conventional 40° angle for the features of reduction in belt noise and tension decay.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al with the teachings of White, Jr. et al, to augment the rib angles further as depicted by Winninger et al and as reviewed by White, Jr. et al, in experimentation having predictable results to gain the benefits of enhanced/stabilized power transfer and service life.

However, White, Jr. et al are silent with respect to a tensile cord load.

Attention is directed to Suhling who teaches an electric circuit for detecting a tensile cord failure and an interface to provide an alarm signal (audible or visual) and/or to automatically shutdown a hoist motor (Col. 4, line 38). Siefert teaches further his apparatus for measuring of the stress of reinforcing cords and his electrical circuit for indicating the stress under various operating conditions.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al and White, Jr. et al with the teachings of Suhling and Siefert to reduce noise, tension decay and drive capacity, for ergonomics and reduction in operating costs, as well as to promote safety.

Claims 35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al, White, Jr. et al, Suhling and Siefert, as applied to Claim 26, and in further view of Stork.

Re: Claim 35, Winninger et al, White, Jr. et al, Suhling and Siefert are silent regarding a fiber loading in their elastomeric bodies.

Attention is directed to Stork who teaches such to resist the formation of cracks.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al, White, Jr. et al, Suhling and Siefert with the teaching of Stork to inhibit the formation/propagation of cracks for enhanced service life and safety.

With respect to **Claim 38**, Stork teaches, "...rubberized woven fabric material such as cotton, polyester or nylon or combinations thereof..." (Col. 3, Line 58) that forms his "partial tension section" as a "flexible resilient material".

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reference of Winninger et al, White, Jr. et al, Suhling and Siefert with the teaching of Stork to provide a matrix of fibers for the enhancement of tensile and torsional strength properties for enhanced performance and service life.

Claims 1 – 2, 4 – 5, 13 – 14, 16, 17, 28 – 29, 31 and 43 - 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adifon et al (WO 99/43598) in view of McKay (US 2,221,984).

Re: Claims 1, 13, 28, 31 and 43 - 45, Adifon et al disclose an elastomeric body (Fig. 7) having a width w and a thickness t and having a pulley-engaging surface, the elastomeric body having an aspect ratio greater than one and a tensile cord (726) contained within the elastomeric body and extending longitudinally. However, Adifon et al disclose their pulley-engaging surface and corresponding pulley as having flat profiles.

McKay teaches that an elastomeric body (comprising 10, 11, Fig. 3) having a ribbed profile depicted as approximately 90°, whereby the plurality of ribs are disclosed as being placed at right angles to another (Pg. 1, Col. 2, L. 39), and the pulleyengaging surface, in accompaniment with a pulley having a ribbed profile (12), are disclosed to provide "...a higher coefficient of friction between the belting and the pulley..." for the advantages of greater load carrying without slippage, lower initial tension, and increased service life (Pg. 2, Col. 1, Lines 35 - 49).

It would have been obvious to one of ordinary skill in the art to modify the invention of Adifon et al with the teaching of McKay to provide a ribbed pulley-engaging surface, with a rib angle of approximately 90°, to gain the benefits of performance and operational efficiencies.

Response to Arguments

Applicant's arguments filed 19 October 2007 have been fully considered but are not entirely persuasive.

With respect to the reference of Winninger et al and their anticipation of the claimed *approximate* angle as depicted in their figures of reference, the examiner acknowledges applicant's arguments with respect to the referenced ISO Standard 9981, for which the applicant has provided a copy dated 01 November 1998 in which an angle 40° is listed; consequently, a definitive angle of reference with respect to the disclosure of Winninger et al is acknowledged; however, the depicted angle of Winninger et al, as noted in prior office action(s), is certainly well in excess as that provided in the ISO standard as provided by the applicant.

As cited in the office actions of 19 April 2006 and 3 October 2007, and as acknowledged by the applicant, the reference of White, Jr. et al (patent date of 1 Jan. 1991) teaches a preference of a rib having a 60° angle versus the (then) conventional 40° angle for the features as claimed by the instant invention – reduction in belt noise and reduced tension decay – to which the applicant responded that it would require a "leap" to use the reference of White, Jr. et al to increase the rib angle an additional 50% and thereby anticipate the *approximate* angle as claimed by the instant invention. As the examiner stated previously, White, Jr. et al nevertheless explicitly teach an enhancement over then conventional belt angles for the features of the instant invention, which in combination with the Winninger et al reference and those cited/referenced in previous office actions, describes an appreciation by those having ordinary skill in the art to increase, certainly not decrease, the rib angle for the very same features as those of the instant invention.

Furthermore, the "leap" of White, Jr. et al entails an increase in rib angle of 50% over that of the prior art at the time their invention was made. In that the applicant has disclosed and claimed a range of 60° to 120° as well as an "approximate" angle of 90°, whereas experimentation on the part of the applicant in which unexpected results were derived has not been disclosed, the exceptionally pertinent teachings of White, Jr. et al as further excited by Winninger et al are considered by the examiner to be anticipatory.

With respect to the rejection of the independent claims by the references of Adifon et al in view of McKay, McKay depicts the approximate angle as claimed in the instant invention for the cited features reflecting several of those of the instant invention.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Adifon discloses a flat belt made of an elastomer and having internal tensile cords for load-carrying, whereby the flat belt is used for suspension in an elevator installation for features as known in the art. McKay teaches his flat belt made of an elastomer with an internal textile fabric whereby his belt has pulley engaging ribs, wherein each of said ribs lies at an 90° offset to another and adjacent ribs are depicted as having an inclusive angle of 60° to 120°, for the features of superior load-carrying capacity and service life as well as reduction in tension decay and slippage. These criteria are certainly pertinent to the art of the instant invention and the reference of Adifon.

Finally, it would have been an obvious to one of ordinary skill in the art, as a matter of optimization and experimentation, to provide the rib having an angle of approximately 90° (range of 60° to 120°) in as much as the criticality of this angle has not been disclosed yet such range of angle has been anticipated by the prior art of reference.

Applicant has refrained from commenting on the previously cited art deemed relevant to the instant invention by the examiner.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kitahama et al (US 4,904,232), Ach (2004/0262087) and Black (GB 2,134,209 A) and Takami et al (US 4,773,895) are cited for references of elastomeric bodies having ribbed profiles with rib angles of approximate 90°.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Kruer whose telephone number is 571.272.5913. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Cuomo can be reached on 571.272.6856856. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866.217.9197 (toll-free).

SHK

13 February 2008

/Peter M. Cuomo/

Supervisory Patent Examiner, Art Unit 3654